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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,451	07/07/2003	Toshimoto Nakagawa	07200/032001	7502

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EXAMINER	
ARANCIBIA, MAUREEN GRAMAGLIA	
ART UNIT	**PAPER NUMBER**
1763	

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/614,451	NAKAGAWA ET AL.	
	Examiner	Art Unit	
	Maureen G. Arancibia	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 December 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 1 November 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It also fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Objections

2. **Claims 1-3 and 7 are objected to because of the following informalities:** It appears that Line 30 of Claim 1 and Line 30 of Claim 7 should each be corrected to read a "**valve** travel signal". (See, for example, Page 24, Line 2 of the Specification.) Claims 2 and 3 are objected to due to their dependence on Claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,062,438 to Micheletti in view of U.S. Patent 4,806,192 to Haas and U.S. Patent 6,729,041 to Shindo et al.

In regards to Claims 1 and 7, Micheletti teaches a spraying apparatus (Figure 1), comprising:

a first solution tank 6;

a plurality of chambers 5, 7 in which a substrate to be processed is accommodated (Figure 1), wherein the plurality of chambers are provided in communication with each other, and wherein the substrate is supplied from a first stage chamber (first chamber 5) to a next stage chamber (second chamber 7) (Figure 1; Column 2, Lines 34-37);

a first spray that is connected to the first solution tank 6 and sprays the solution onto the substrate in the first chamber (Column 2, Lines 34-37);

a first solution line 22 that supplies the sprayed solution from the first chamber 5 to the first solution tank 6 (Column 3, Lines 1-4);

a gas line 20 that supplies a mixed gas containing a solution component from the first chamber to outside;

a gas/liquid separation block 10 that is connected to the gas line, and that separates the solution component from the introduced mixed gas (Column 2, Lines 59-66);

a second solution tank 8;

a second spray that is connected to the second tank 8 and sprays the solution onto the substrate in the second chamber 7 (Column 2, Lines 37-39);

a second solution line 23 that supplies the sprayed solution from the second chamber 7 to the second tank 8 (Column 3, Lines 1-10);

a recovered solution line that is connected to the gas/liquid separation block 10 and supplies the separated solution component to the second tank 8, as broadly recited in the claim, via third chamber 9 and supply line 24 (Column 2, Lines 39-41; Column 3, Lines 7-10);

and a rinse chamber 9 provided in communication with a last stage chamber 7, wherein the substrate is supplied from the last stage chamber to the rinse chamber, and wherein the rinse chamber is supplied with water. (Column 2, Lines 34-40)

Micheletti teaches that a gas supply unit 12 is fluidly connected to the rinse chamber 9 and the solution processing chambers 5 and 7, and supplies gas to the rinse chamber and the last stage solution processing chamber, as broadly recited in the claim. (Figure 1, arrows 15, 16, and 18; Column 2, Lines 50-59)

The apparatus taught by Micheletti would be inherently capable of supplying a resist stripping solution to a substrate covered in resist, since the apparatus taught by Micheletti is used to spray a liquid, and to separate that liquid from a gas component. The gas supply unit taught by Micheletti would be inherently capable of supplying an inert gas. This rejection is based on the fact the apparatus structure taught above has the inherent capability of being used in the manner intended by the Applicant. When a

rejection is based on inherency, a rejection under 35 U.S.C. 102 or U.S.C. 103 is appropriate. (See *In re Fitzgerald* 205 USPQ 594 or MPEP 2112).

Micheletti does not expressly teach a line that is connected to the second tank and supplies solution to the first tank.

Haas teaches a line 29 that is connected to a second tank 6 and supplies solution to a first tank 26. (Figure 1)

It would have been obvious to one of ordinary skill in the art to modify the apparatus taught by Micheletti to provide a line that is connected to the second tank and supplies solution to the first tank, as taught by Haas. The motivation for making such a modification, as taught by Haas (Column 2, Line 31 - Column 4, Line 12), would have been to allow a reactant to be added at the second tank and then fed back in diluted form to the first tank, thus also preventing the reactant from becoming too concentrated at the second tank.

The combination of Micheletti and Haas does not expressly teach that a damper that is connected on the gas line, or a pressure switch that monitors an inner pressure of the rinse chamber or the last stage solution processing chamber and transmits to the damper a valve travel signal.

Shindo et al. teaches that a damper (valves V9 and V10, which meet the limitation as broadly recited in the claim) is connected on a gas line 91 that connects a gas/liquid separation block 95 to a processing chamber 10 (Figure 1; Column 16, Lines 57-64), and that a pressure switch (CPU 100) monitors an inner pressure of the

processing chamber 10 (via pressure sensor PS1; Column 13, Lines 17-20) and transmits to the damper a valve travel signal. (Column 17, Lines 11-19)

It would have been obvious to one of ordinary skill in the art to modify the combination of Micheletti and Haas to provide a damper on the gas line and a pressure switch to monitor an inner pressure of any of the processing chambers, including the rinse chamber or the last stage solution processing chamber, and to transmit a valve travel signal to the damper. The motivation for making these modifications, as taught by Shindo et al. (Column 13, Lines 17-20; Column 17, Lines 6-40; Column 21, Line 44 - Column 22, Line 30), would have been to help maintain a desired pressure in the rinse chamber or the last stage solution processing chamber by allowing for active control of the exhaust from the processing system.

5. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Micheletti in view of Haas and Shindo et al. as applied to Claim 1 above, and further in view of U.S. Patent 5,762,749 to Suzuki et al.

The teachings of Micheletti, Haas, and Shindo et al. were discussed above. Micheletti additionally teaches a separated gas supply unit 21 that receives gas separated from the solution component in the liquid/gas separation block and supplies the gas to a gas spout unit 14 via gas supply unit 12. (Column 2, Line 67 - Column 3, Line 1)

The combination of Micheletti, Haas, and Shindo et al. does not expressly teach that at least one of the solution processing chambers includes the gas spout unit, facing the substrate.

Suzuki et al. teaches gas spout units 2 and 3 in a processing chamber 27 facing substrate 5.

It would have been obvious to one of ordinary skill in the art to modify the apparatus of Micheletti, Haas, and Shindo et al. to provide the gas spout unit facing the substrate in one of the solution processing chambers, as taught by Suzuki et al. The motivation for doing so, as taught by Suzuki et al. (Column 7, Lines 4-6), would have been to blow off any liquid still on the substrate after using the apparatus for a wet processing method.

Response to Arguments

6. Applicant's arguments filed 20 December 2005 have been fully considered but they are not persuasive.

Specifically, in regards to Applicant's argument that Micheletti does not teach that the gas supply unit is connected to the rinse chamber or the last stage solution processing chamber, the Examiner maintains that the gas supply unit 12 of Micheletti is *fluidly connected* to the rinse chamber 9 and the solution processing chambers 5 and 7, and supplies gas to the rinse chamber and the last stage solution processing chamber, *as broadly recited in the claim*. (Figure 1, arrows 15, 16, and 18; Column 2, Lines 50-59)

7. Applicant's remaining arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maureen G. Arancibia whose telephone number is (571) 272-1219. The examiner can normally be reached on core hours of 10-5, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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